

Work Order ID 78466

January-10-12 10:04:57 AM

SHIP 23
FEB

78466



Page 1

Item ID: D206-667-107BL

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Crosstube Mid Fwd, Blue

Start Date: 10/01/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 23/02/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: M.L.J.

Date: 12/01/10

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D206-667-147

A (DEO)

DSI9565

A

IIN-D206-667

D

100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D206-667-107 chg 002

12/02/17

110

Pick Kit

0.00

110

Packaging

Packaging

Memo

0.00

Packaging

MO

12/1/26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 78466

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	BENDING MACHINE - CROSSTUBES	0.00							
120									
CNC Bend 2	Memo	0.00							
CNC Alpha 160 Bender	Bend tube as per Dwg D206-667-147 using CNC bender program								
130	QC15- Crosstube Dimensional Check	0.00							
130									
QC	Memo	0.00							
Quality Control									

JW
MO

12-1-26

8/26/26

(X)

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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 Revision ID: Stop ***NS2***
 Item Name: Crosstube Mid Fwd, Blue
 Start Date: 10/01/2012 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 23/02/2012 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Crosstubes	0.00							
140									
Crosstubes	Memo	0.00							
Crosstubes	1-Drill holes & ream using drill Jig DT ⁸⁵⁴¹ & DT ⁸⁵⁴² as per Dwg D206-667-147. Drill all (3) top holes.								
	3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.								
	4-Drill pilot holes using drill Jig DT ⁸⁵⁴¹ & DT ⁸⁵⁴² as per Dwg D206-667-147. Drill only the top (2) holes.								
	5-Drill pilot holes as per Dwg D206-667-147. Drill only the top (2) holes.								
	6-Drill Fwd rivet holes using drill Jig DT ^{8787 FWD} as per Dwg D206-667-147. Note: Fwd side has 3x top holes.								
	7-Drill Aft rivet holes using drill Jig DT ^{8787 AFT} as per Dwg D206-667-147.								
	8-C'sink holes as per Dwg D206-667-147. Allow rivet to sit below surface to compensate for paint.								
	9-Scribe part # and batch # using vibrating stylus as per Dwg D206-667-147 Inside of Cuff(Donot engrave on outside of tube)								
	10-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D206-667-147								

Handwritten notes and signatures:

- 12.01.26* (written vertically on the left)
- MO* (written near the bottom right)
- 12/1/26* (written on the right)
- MO* (written near the bottom right)
- 12/1/30* (written on the bottom right)
- JW* (signature near the bottom right)

Dart Aerospace Ltd

W/O: 78466		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D706-66710713X PAR #: Fault Category: X-tube Landing Gear NCR: (Yes) No DQA: Date: 12/2/27
 Resolution: Acceptable Disposition: Acceptable QA: N/C Closed: Date: 12/2/27

NCR: 12-1223		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12.01.26	140	Hole drilled on wrong side of cuff. R.L. Hood + who not correctly	CP 12.01.26 PS/042	Drill all holes through cuff As to	JW 12-1-26	MO 12/1/26	CP 12.01.26 PS/042	
12.01.26	140		CP 12.01.26 PS/042	Add DSI 5346 Rev. N to paperwork	n/n		CP 12.01.26 PS/042	

NOTE: Date & initial all entries

78466

January-10-12 10:04:57 AM

N900040100

Setup Start *NS1*

Stop *NS2*

1

*** 1 ***

Reference:

Run Start *NR1*

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

0.00

0.00

MO/Rm

12/1/3

0.00

0.00

8/21/3

0.00

0.00

8/20/31

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Work Order ID 78466***78466***

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Required Date: 23/02/2012 Req'd Qty: 1.00

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Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start ***NR1***

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

Outsource process - NDT per QSI038 4.1

0.00

180

Outsource2

Memo

0.00

Outsource process - NDT

CROSSTUBES

70.16046

CL 12/01/310

190

Packaging

0.00

190

Packaging

Memo

0.00

Packaging

Ensure copy of NDT results attached to work order.

CL 12/04/31 (1)

200

QC5- Inspect part completeness to step on W/O

0.00

200

QC

Memo

0.00

Quality Control

8.2102106

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Required Date: 23/02/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	SprayPaint	0.00							
210									
SprayPaint	Memo	0.00							
Spray Painting	1-Prime inside and outside crosstube as per QSI 005 4.2								
	2-Paint outside crosstube with White Imron as per QSI 005 4.2								
	PRIME:								
	Start Time: <u>9:00</u>								
	Finish Time: <u>10:00</u>								
	PAINT:								
	Start Time: <u>2:15</u>								
	Finish Time: <u>3:00</u>								
220	QC14- Inspect Spray Paint	0.00							
220									
QC	Memo	0.00							
Quality Control	Wrap in plastic bag to protect from scratches								

18 12 - 2 - 7

12 - 02 - 08 (1)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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 Start Date: 10/01/2012 Start Qty: 1.00 ***1*** Cust Item ID:
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 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230		0.00							
230	Crosstubes								
Crosstubes	Memo	0.00							
Crosstubes	1-Abrade mating surfaces of support and crosstube with 400 grit sandpaper, clean the area with 4105S wash 'n' wipe								
	2-Install supports with Proseal 890 per DSI9565 and QSI 015 A/R Proseal 890 Batch: <u>120072</u>								
	3- Torque bolts as per dwg								
	4-Install nut plates as per Dwg D206-667-147. Touch-up rivet heads with Imron paint.								
240	QC5- Inspect part completeness to step on W/O	0.00							
240									
QC	Memo	0.00							
Quality Control									

As 12-2-10

81760115

(Signature)

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Cust Item ID:

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1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250	Pick Kit	0.00							
250									
Packaging	Memo	0.00							
Packaging									
260	QC4- 100% Inspect kits for completeness	0.00							
260	<u>WEDS A DSP</u>	0.00	8126217						
QC	Memo								
Quality Control									
270		0.00							
270	Packaging								
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D206-667-107								
	Location: _____								
	PPP Rev: <u>541P</u>								

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
280	QC21- Final Inspection - Work Order Release	0.00							
280									
QC	Memo	0.00							
Quality Control									

POSITIVE RECALL

EFFECTIVE 12/2/2016 AUTH q
RELEASED q DATE 12.02.16

Add DSI 9346 Rev. N
to paperwork

U 1202-17

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

January-10-12 9:49:49 AM

Page 1

Work Order ID: 78466

78466

Parent Item: D206-667-107BL

***D206-667-107RI ***

Parent Item Name: Crosstube Mid Fwd, Blue

Start Date: 10/01/2012

Required Date: 23/02/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: revA 11.01.13 New Issue EC verified by:DD
11.08.08 PER ECN 11-615 DD VERF:EC

IPP REV:B

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D206-667-147TRN

Manufactured

No

110

Each

2.0000

1

1

D206-667-147TRN

Crosstube Assembly, Mid Fwd

Location

Loc Qty

Loc Code

LG

78501

2

69976

1

69980

1

① MO 12/1/25

D2873-043

Manufactured

No

230

Each

34.0000

2

2

D2873-043

Nut Plate Assembly

AS 12-2-11

Location

Loc Qty

Loc Code

LG052

34

72644

2

73605

12

75010

20

2

D2873-045

Manufactured

No

230

Each

27.0000

2

2

D2873-045

Nut Plate Assembly

AS 12-2-11

Location

Loc Qty

Loc Code

LG052

27

73529

7

74985

20

2

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Picklist Print

January-10-12 9:49:50 AM

Work Order ID: 78466

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Parent Item: D206-667-107BL

***D206-667-107BI ***

Parent Item Name: Crosstube Mid Fwd, Blue

Start Date: 10/01/2012

Required Date: 23/02/2012

Start Qty: 1.00

Required Qty: 1.00

D2891-1 Manufactured No

230 Each 40.0000 2 2

D2891-1

2.25 Support

**

AB 12-2-10

Location

Loc Qty

Loc Code

LG052

40

12822

20

2

75176

20

D3595-063-395 Manufactured No

230 Each 98.0000 4 4

D3595-063-395

RUBBER CUSHION

**

AB 12-2-10

Location

Loc Qty

Loc Code

MAT052

98

70975

21

74300

77

4

cut (4)0.063" X 3.95"

MS20601-AD4W8 Purchased No

230 Each 321.0000 14 14

MS20601-AD4W8

RIVET

**

AB 12-2-11

Location

Loc Qty

Loc Code

LG

100

108521

100

LG051

121

117106

7

117381

3

117979

3

118572

8

119107

100

ST322

100

118454

100

14

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
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*D206-667-107BI *

Parent Item Name: Crosstube Mid Fwd, Blue

Start Date: 10/01/2012

Required Date: 23/02/2012

Start Qty: 1.00

Required Qty: 1.00

MS21920-20

Purchased

No

230

Each

60.0000

4

4

MS21920-20

Clamp (per MIL-DTL-8783C)

* 120475

**

At 12-2-10

4

Location

Loc Qty

Loc Code

LG050

60

116799

10

119386

50

AN5-30A

Purchased

No

250

Each

62.0000

4

4

AN5-30A

BOLT

**

Location

Loc Qty

Loc Code

ST339

62

117514

9

118451

3

118706

50

118706

AN5-32A

Purchased

No

250

Each

215.0000

4

4

AN5-32A

Bolt

**

Location

Loc Qty

Loc Code

ST339

215

118422

2

118628

38

118983

25

119328

100

119862

50

118923

11/2/13 ①

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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*D206-667-107BI *

Parent Item Name: Crosstube Mid Fwd, Blue

Start Date: 10/01/2012

Required Date: 23/02/2012

Start Qty: 1.00

Required Qty: 1.00

AN5-7A Purchased No
AN5-7A
 Bolt

250 Each 2,821.000 10 10 ~
 **

Location	Loc Qty	Loc Code
ST337	2821	
117313	6	
118422	1	
119017	2814	

AN960JD516 NAS1149D0563J Purchased No
AN960.ID516
 Washer

250 Each 0.0000 18 18
 **

AN970-4 Purchased No
AN970-4
 Washer

250 Each 109.0000 12 12
 **

Location	Loc Qty	Loc Code
ST344	109	
115936	11	
116900	1	
117795	97	

MS21042L5 Purchased No
MS21042I 5
 Nut

250 Each 2,022.000 4 4
 **

Location	Loc Qty	Loc Code
ST300	2022	
116105	5	
116548	43	
117611	50	
118179	424	
119109	1500	

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

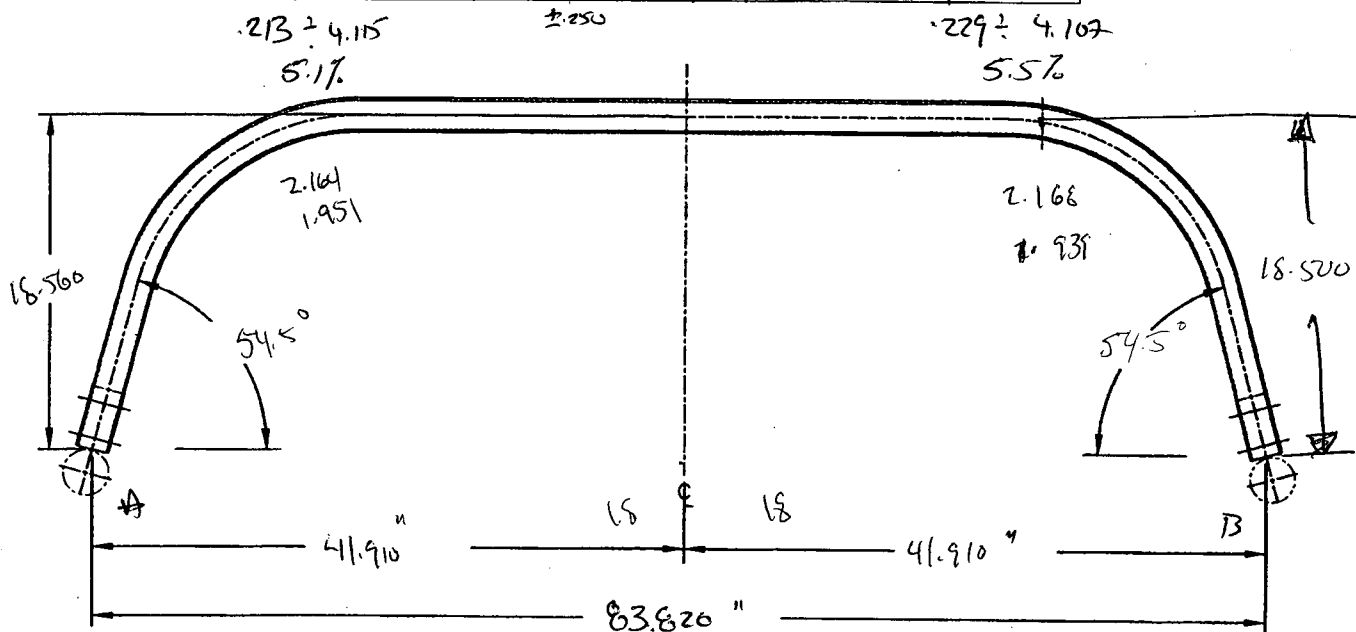
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	78466
Description:		Part Number:	
Inspection Dwg:	Rev:	Page 1 of 1	

Required Dimension	Min	Max
Height 18.5 18.0	18.34"	18.60"
1/2 Span 41.92 ± .130	41.79"	42.05"
Angle 54 ± .8	54°	56°
Total Span 83.84	83.59"	84.09"



Comments	
Size A2 5.1% crushing	Q 18 Passes
Size B2 5.5% crushing	Q 18 Passes

QC15 Inspection	S
Date	12/01/76

Rev	Date	Change	Revised by	Approved
A		New Issue		
B	06.09.19	Reformat; QC level revised	KJ/JM	
C	07.02.06	Reformat	KJ/JM	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Item	Qty	Part Number	Description
	-147		
1	X	D206-667-147	CROSSTUBE ASSEMBLY (206L MID FWD)
2	1	D6002-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299- 947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6002-115
FINISHED LENGTH = 99.84±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-147" AND BATCH NUMBER ON
INSIDE OF CUFF PER DART QSI 044 6.4 (VIBRATING STYLUS).
- 7) WEIGHT: 15.0 lbs (-507 = 12.84)
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY,
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI
015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE
THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS
ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOW COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT

WITHOUT NOTICE
WORK ORDER
NO. 78466-MLS

12/01/10

DEO ATTACHED

ECW #11-615
11.07.28

UNDER REVIEW

RELEASED
2011-05-23

A	NEW ISSUE	CP	10.11.23
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	10.12.23		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D206-667-147	REV. A SHEET 1 OF 4
TITLE CROSSTUBE ASS'Y (206L MID FWD)	SCALE NTS
COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR REPRODUCED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

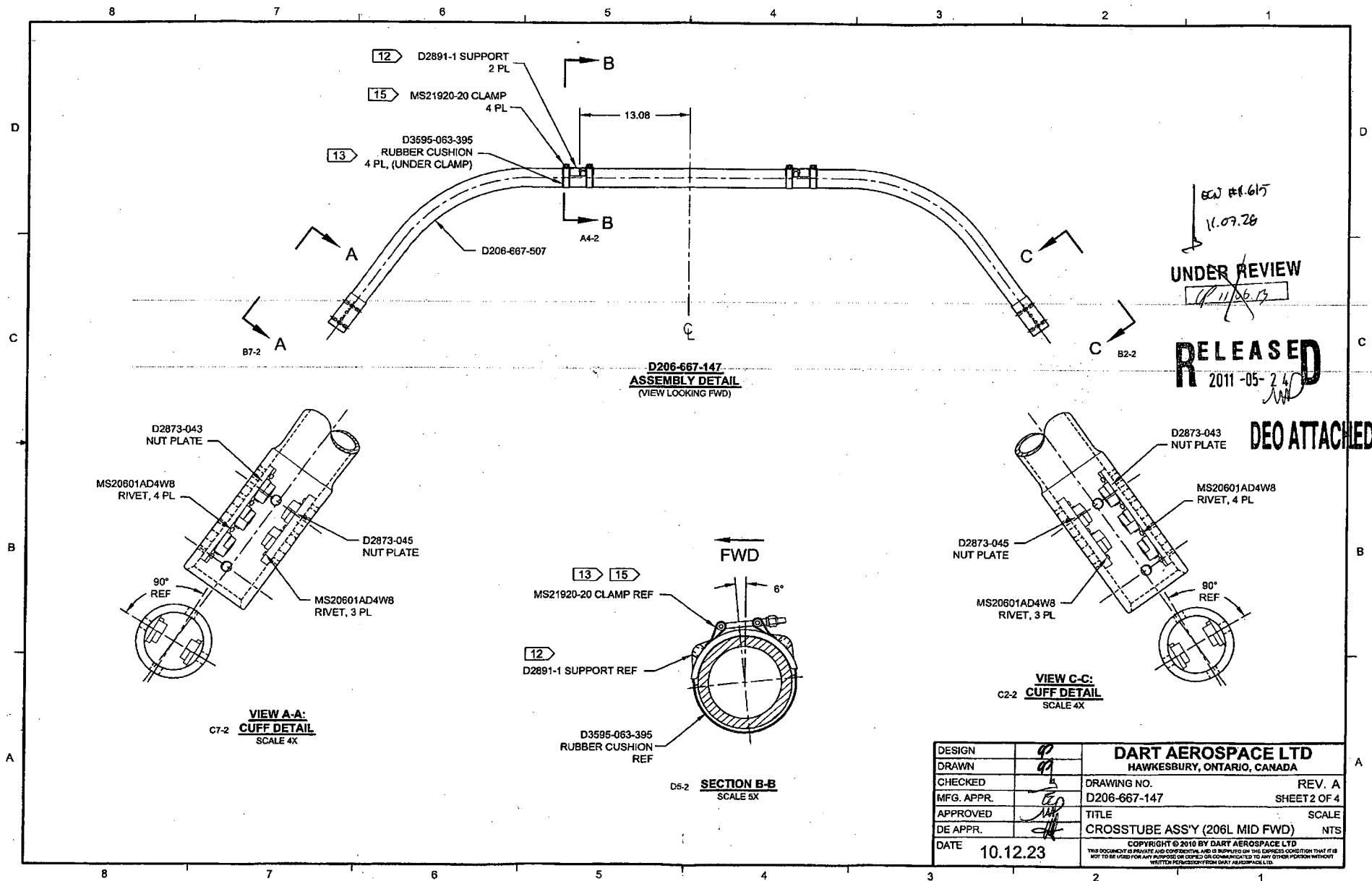
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

78466



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

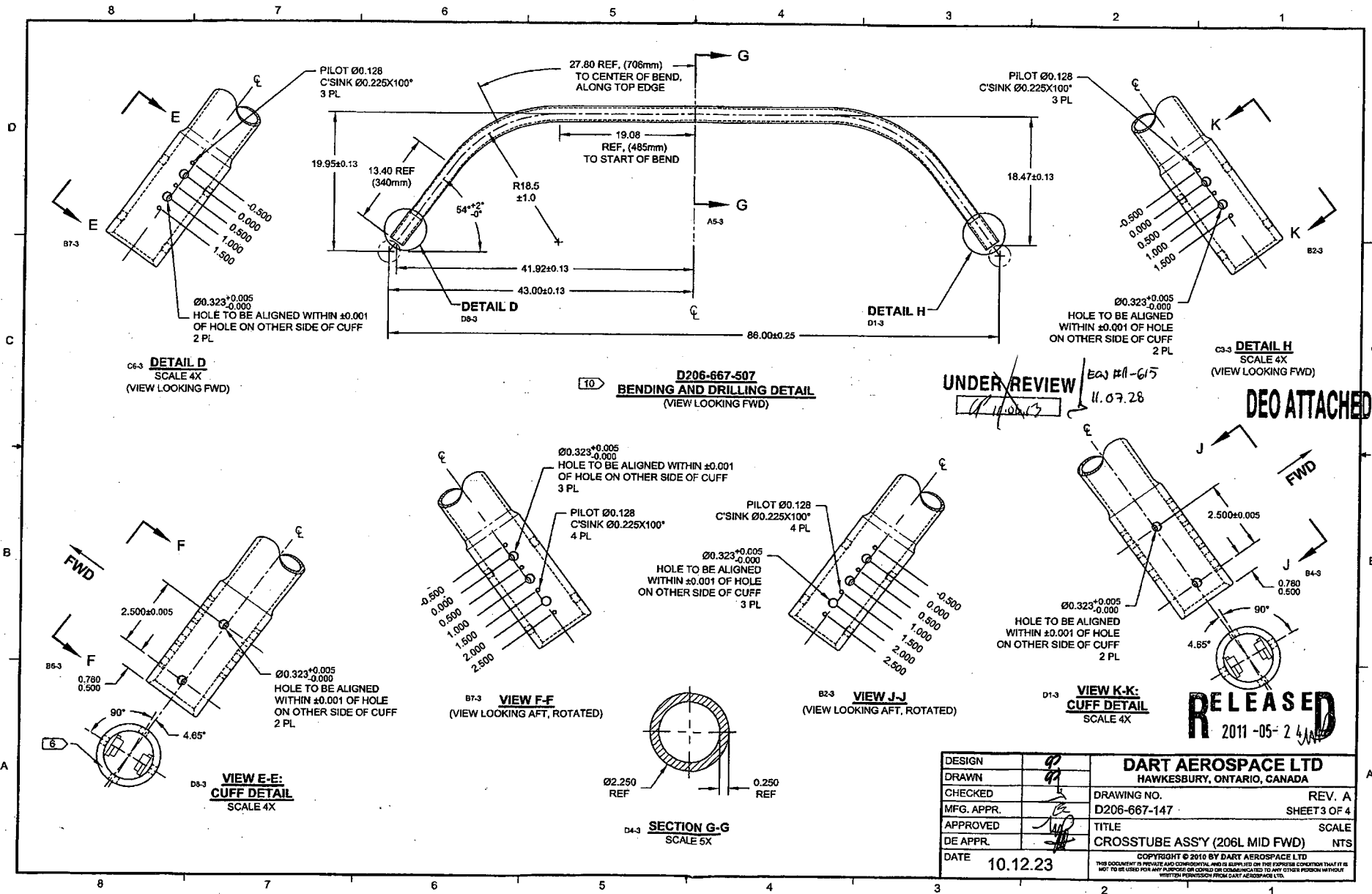
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

70466



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

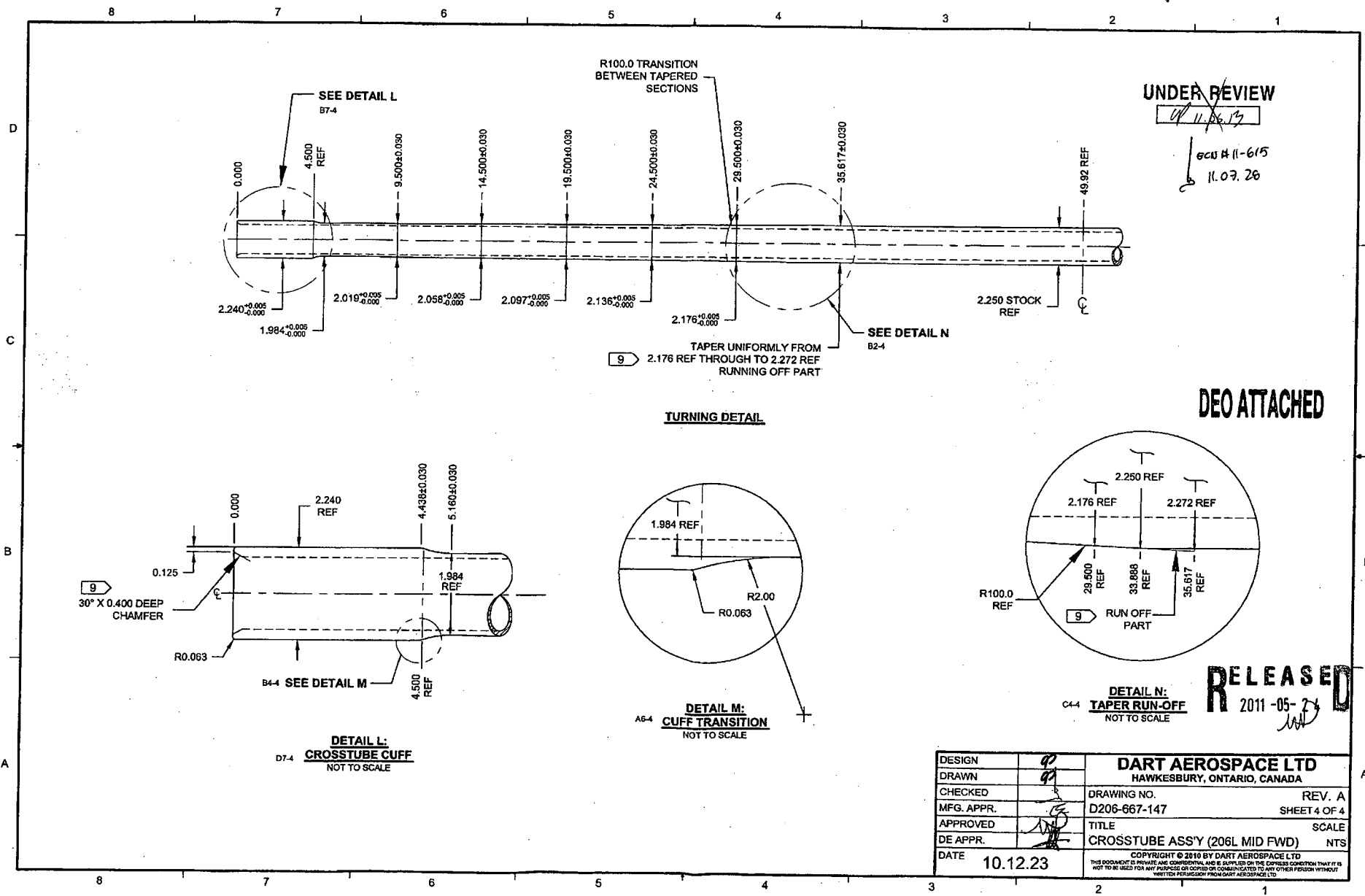
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

70466



UNDER REVIEW
 11.06.13
 600 # 11-615
 11.07.26

DEO ATTACHED

RELEASED
 2011-05-23

DESIGN	92	DART AEROSPACE LTD	
DRAWN	92	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D206-667-147	SHEET 4 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE ASS'Y (206L MID FWD)	NTS
DATE	10.12.23	COPYRIGHT © 2010 BY DART AEROSPACE LTD	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

78466

DRAWING NO. D206-667-147	TITLE CROSSTUBE ASS'Y (206L MID FWD)	REV. A	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D206-667-147-A-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN 92	CHECKED ASS	MFG. APPR. [Signature]	APPROVED [Signature]		DE APPR. [Signature]		
DATE 11.07.15	DATE 11.07.20	DATE 11.07.21	DATE 11/07/21		DATE 11.07.21		

PURPOSE:

REPLACE MAGNOBOND WITH PROSEAL.

CHANGE:

IS:

Item	Qty -147	Part Number	Description
9	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

WAS:

9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
---	-----	----------------	---

NOTE 12 & 15, SHEET 1 IS AMENDED AS FOLLOWS:

IS:

- 12) TO INSTALL D2891-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. **PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.**

WAS:

- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

RELEASED
2011-07-28

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



LIQUID PENETRANT TEST REPORT

P- 14905

CLIENT	<u>Dart Aerospace</u>	DATE	<u>January 30, 2012</u>	PAGE	<u>1</u> OF <u>1</u>
ATTENTION	<u>LINDA LARUE</u>	ACUREN JOB NO.	<u>188-12-00022</u>	TIME	AM <input checked="" type="checkbox"/> PM <input type="checkbox"/>
ADDRESS	<u>1270 ABERDEEN ST</u> <u>Waukegan, IL 60087</u>	PO/VO NO.	<u>---</u>		
		WORK LOCATION	<u>CANE</u>		
		ACCEPTANCE STD.	<u>ASME 1417/01-035</u>	REV./DATE	<u>2005</u>
PROJECT	<u>E.P.I. on machined part</u>				
ITEM(S) EXAMINED	<u>4 CROSS TUBES</u>				

JOB DESCRIPTION	PROCEDURE NO. <u>LT1002</u>	REV./DATE <u>2005</u>	TECHNIQUE NO. <u>LT1042</u>	REV./DATE <u>2005</u>
PART NO.	<u>SEE RESULTS</u>		MATERIAL <u>S. STEEL / ALUMINUM</u>	THICKNESS <u>VARIABLE</u>
SCOPE	<u>WET FLOUORESCENT LIQUID PENETRANT INSPECTION</u> <u>CARRIED OUT ON 100% EXTERNAL SURFACE</u>			

TEST DETAILS				
METHOD	<input checked="" type="checkbox"/> FLUORESCENT	<input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH	<input type="checkbox"/> SOLVENT REMOVABLE
FAMILY BRAND	<u>WATERFLUX</u>		<input type="checkbox"/> POST EMULSIFIED	
PENETRANT	<u>2000</u>	MINIMUM DWELL TIME <u>10</u> MIN.	BLACK LIGHT S/N <u>16457</u>	<input type="checkbox"/> OUTPUT > 1000 μ W/cm ²
PENETRANT REMOVER	<u>100</u>	MINIMUM DRY TIME <u>>10</u> MIN.	<input type="checkbox"/> FLASHLIGHT	<input type="checkbox"/> TROUBLELIGHT
DEVELOPER	<u>SND 3-2</u>	MINIMUM DWELL TIME <u>10</u> MIN.	<input type="checkbox"/> OTHER <u>L43.00</u>	<input type="checkbox"/> OUTPUT > 100 fc @ SURFACE
DEVELOPER TYPE	<input checked="" type="checkbox"/> NON AQUEOUS	<input type="checkbox"/> AQUEOUS	LIGHT METER S/N <u>1078866</u>	CAL DUE DATE <u>FEB 27</u>
	<input type="checkbox"/> DRY			<u>2012</u>

TEST SURFACE				
SURFACE CONDITION	<input type="checkbox"/> AS GROUND	<input type="checkbox"/> AS WELDED	<input checked="" type="checkbox"/> MACHINED	<input type="checkbox"/> SHOT BLASTED
SURFACE TEMPERATURE	<input type="checkbox"/> < -4°C/ 20°F	<input type="checkbox"/> -4°C/ 20°F TO 10°C/ 50°F	<input checked="" type="checkbox"/> 10°C/ 50°F TO 52°C/ 125°F	<input type="checkbox"/> CLEAN BARE METAL
	<input type="checkbox"/> > 52°C/ 125°F			
RESULTS-	<input type="checkbox"/> METRIC <input type="checkbox"/> IMPERIAL			

<u>2 - W.O. 77271 - Mount.</u> ✓	
<u>1 - W.O. 78466 - CROSS TUBE</u> ✓	
<u>1 - W.O. 78465 - CROSS TUBE</u> ✓	x INDICATIONS TO BE CLEARED.
<u>1 - W.O. 78470 - CROSS TUBE</u> ✓	
<u>1 - W.O. 78467 - CROSS TUBE</u> ✓	
<u>8/12/02/10</u>	

Scope of Services
The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care
In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES	
CLIENT REPRESENTATIVE	<u>Andrew Sheldon</u>
TECHNICIAN (SIGNATURE):	<u>[Signature]</u>
NAME (PRINT):	<u>Mike Hinder</u>
CGSB LEVEL <u>II</u>	SNT LEVEL <u>II</u>
CGSB REG. NO. <u>6666</u>	CGSB REG. NO. <u>---</u>
DTR #	<u>E-03803</u>
REPORT REVIEWED BY:	
NAME	INITIALS